



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,595	12/21/2001	Assaf Govari	BIO-137	6087
27777	7590	06/28/2007	EXAMINER	
PHILIP S. JOHNSON			ROY, BAISAKHI	
JOHNSON & JOHNSON				
ONE JOHNSON & JOHNSON PLAZA			ART UNIT	
NEW BRUNSWICK, NJ 08933-7003			PAPER NUMBER	
			3737	
			MAIL DATE	
			DELIVERY MODE	
			06/28/2007	
			PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/029,595

Applicant(s)

GOVARI, ASSAF

Examiner

Baisakhi Roy

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38 and 40-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38, and 40-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/18/07 have been fully considered but they are not persuasive. With respect to determining the position and orientation coordinates of the object, Vesely teaches said image registration system to register the position of the instrument by the 3-D tracking system and the registration system also provides orientation information of the object inside the body or orientation of the instrument with respect to the body structure (col. 4 lines 66 – col. 5 line 10). Therefore Vesely teaches an image registration system which determines six-dimensional position and orientation coordinates of the object in the body.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, 6, 8-11, 13, 14, 16-23, 25, 27, 28, 30, 32-38, and 40-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesely (5868673) in view of Keller et al. (5353354) and further in view of Burbank et al. (6347241).

Vesely '673 is directed to an apparatus and implementation method for locating a tumor in the breast of the patient alternative to j-wire use, which comprises an acoustic (ultrasound) tag 30 adapted to be fixedly imbedded in the tissue (col. 6 lines 13

-16) and which responds to acoustic waves incident thereon to return acoustic echoes (both the mobile transducers 30 of Fig. 2 or 1032 of Fig. 1 and the body-attached reference transducers 20 of Fig. 2 or 1034 of fig. 1 act ultrasonically as transmitters or receivers (col. 4 lines 8 - 28), a plurality of acoustic transducers 20 which are adapted to be placed at fixed locations on the breast surface so as to direct acoustic energy into the breast when transmitting and to receive energy from tag 30 which is acting in cooperation there with as aforementioned, an acoustic (ultrasound) position sensor (imaging) assembly 1014 (see also col.4 line 29 - col. 5 line 10) which directs ultrasound waves into the body and receives reflective echoes from the embedded and surface reference transducers 30 and 20, and a processing and registration unit 1016 which processes the first signals from reference transducers 20 incorporated into the local 3D tracking system 1012 and also the second signals from the acoustic position sensor (imaging) assembly 1014 to determine the location and orientation of the acoustic tag in the 3D space of the imaging system. Vesely also shows triangulation between the acoustic tag and the acoustic reference transducers as the manner of processing the first signals. Vesely notes in cols. 7-8 that an invasive ablation tool (cryoprobe type endoscope) applied to the tumor may also have tool position sensors attached thereto and as noted in col. 4 lines 25-28, the transducers either are embedded into tumor or applied external to the tumor as references may be of electromagnetic type. Vesely also teaches at the end of col. 4 that using many more transducers improves the position reconstruction and six dimensional position and orientation would inherently follow. Vesely also suggests that position and orientation are determined in three-

dimensional space, towards which end 3 angular orientations and 3 positional coordinates would be needed.

While Vesely does not specifically teach how the relative or local 3D tracking by 1012 of the internally fixed 30 and reference acoustic transducers 20 incorporates into the external reference frame of the processor 1016 and into acoustic assembly 1014 which acts to create the external reference frame of the 3D image, and therefore does not indicate that the acoustic assembly involves plural individual transducers or plural position transducers. It would have been obvious in view of Keller et al col. 2 bottom to use a linear acoustic array 10 of a plurality of acoustic transducers as the acoustic transducer assembly called for in '673 in order to assemble 3D ultrasound images in 1016, as well as to use position sensors e.g. 4, 5, and 6 of acoustic or electromagnetic types (col. 2 lines 17 - 29) in order to assemble the component 2D scan planes into 3D tracking space.

The electromagnetic field generator 112 in Vesely may be attached to a fixed reference so as to service the Keller et al. magnetic position sensor embodiment.

Whereas Vesely col. 4 lines 13-16 pertains to a wired acoustic tag fixed to tumor tissue, it would have been obvious in view of Burbank et al '241 to supplant the transducer 30 with an ultrasound reflective marker such as a gas-filled gelatin capsule, where the encapsulated bubbles in the gelatin shell typically would resonate at a harmonic see col. 2 lines 53 - 56, col. 5 lines 3-5 and col. 7 top since Burbank et al like Vesely is directed to the same technical problem i.e. J-wire/clip/staple replacement (see col. 2 bottom) and this reflective marker approach would provide the image dots of '673

Art Unit: 3737

col. 4 line 42 that are mathematically processed into the external reference registry. It would have been obvious to combine in order to avoid the protruding J-wire interference with surgical trajectory.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
4. 7,160,258 – device and method for mapping, diagnosing, and treating the intestinal tract using a capsule tracking system for tracking it's position and orientation where the system includes an acoustic transducer to emit acoustic signal, acoustic receiver to sense the acoustic signal transmitted by the capsule.
5. 7174201 – position sensing system with integral location pad and position display.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

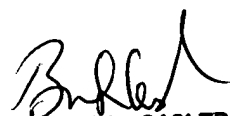
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baisakhi Roy whose telephone number is 571-272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BR

BR

  
BRIAN L. CASLER  
SUPERVISORY PATENT EXAMINER  
TECHNICAL SERVICES